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10 CFR 50.73

October 22, 2007
BW070082

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Braidwood Station, Unit 2
Facility Operating License No. NPF-77
NRC Docket No. STN 50-457

Subject: Licensee Event Report Number 2007-001-00 – Unit 2 Manual Reactor Trip Following Circulating Water Pump Trips

The enclosed Licensee Event Report (LER) is being submitted in accordance with 10 CFR 50.73, "Licensee event report system," paragraph (a)(2)(iv)(A). 10 CFR 50.73(a) requires an LER to be submitted within 60 days following discovery of the event, therefore, this report is being submitted by October 22, 2007.

There are no commitments contained in the attached report. Should you have any questions concerning this submittal, please contact Mr. David Gullott, Regulatory Assurance Manager, at (815) 417-2800.

Respectfully,

Thomas Coutu
Site Vice President
Braidwood Station

Enclosure: LER Number 2007-001-00

IE22
NRR

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2010

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

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4. TITLE

Unit 2 Manual Reactor Trip Due to High Condenser Backpressure Resulting from Circulating Water Pump Trips

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									N/A	N/A
08	23	2007	2007	- 001 -	00	10	22	2007	FACILITY NAME: N/A	DOCKET NUMBER: N/A

9. OPERATING MODE

1

10. POWER LEVEL

100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*

- ☐ 20.2201(b)
- ☐ 20.2201(d)
- ☐ 20.2203(a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☐ 50.73(a)(2)(i)(A)
- ☐ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☐ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☒ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☐ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☐ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☐ OTHER

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER *(Include Area Code)*
Michael Smith, Engineering Director	(815) 417-3800

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
N/A	N/A	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

On August 23, 2007, at 1530 hours, Braidwood Unit 2 reactor manually tripped from 100% power following the automatic trips of the 2A and 2B circulating water pumps due to sudden spiking of the inlet traveling screen water level differential. Operator response to the trip was appropriate and all safety related systems, structures and components operated normally during this event.

The root cause of the Unit 2 trip was that the traveling screen instrumentation experienced a sudden and false high differential level indication brought on by a momentary plugging of the upstream bubbler tube. This momentary plugging was caused by agitated debris during a period of high winds. The corrective action to prevent recurrence will be to install a time delay to preclude trips of the circulating water pumps due to sudden and false high differential level indication.

There were no safety consequences impacting plant or public safety as a result of this event.

This event is being reported pursuant to 10 CFR 50.73(a)(2)(iv)(A) due to actuation of the Reactor Protection System (Reactor Trip) and the Auxiliary Feedwater System.

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NARRATIVE

A. Plant Operating Conditions Before The Event:

Event Date: August 23, 2007 Event Time: 1530

Unit: 2 MODE: 1 Reactor Power: 100 percent

Unit 2 Reactor Coolant System (RCS) [AB] Temperature: 581 degrees F, Pressure: 2238 psig

B. Description of Event:

There were no additional structures, systems or components inoperable at the beginning of the event that contributed to the severity of the event.

On August 23, 2007, Braidwood Unit 2 was operating at full power.

At 15:24 hours, circulating water (CW) [KE] pump 2A tripped due to high differential level across the inlet traveling screens. Operations entered the appropriate abnormal operating procedure.

At 15:29 hours, while Operations was in the process of taking the proceduralized required actions to stabilize the event, CW pump 2B tripped due to a high differential level across the inlet traveling screens. In response, operator actions included isolating the 2B and 2D waterboxes, and initiating a 580 MWe ramp down at 20 MWe/minute.

At 15:30 hours, due to condenser backpressure exceeding allowable limits, Operations manually tripped Unit 2.

Operator response to the trip was proper and all safety related systems, structures and components operated normally during this event. The auxiliary feedwater system [BA] actuated, as expected, in this event to maintain steam generator levels.

C. Cause of Event

The root cause of the Unit 2 trip was that the traveling screen instrumentation experienced a sudden and false high differential level indication brought on by a momentary plugging of the upstream bubbler tube from agitated debris during a period of high winds. An evaluation determined that a pluggage of less than 0.2 seconds would be adequate to cause a spike sufficient in size to reach the pump trip point.

On August 21, 2007, the station experienced a fish kill in the cooling lake. At that time, Braidwood began monitoring of CW pump inlet traveling screens for cleanliness and proper operation. The traveling screens and associated level monitoring components performed as expected.

On August 23, 2007, prior to the trip, severe weather conditions, including high winds, moved into the area. During the high winds, Unit 2 experienced the automatic trips of the 2A and 2B CW pumps due to sudden spiking of the inlet traveling screen water level differential. The loss of substantial CW flow resulted in condenser backpressure to increase beyond allowable limits and therefore Operations manually tripped Unit 2.

Following the Unit 2 trip, the operators continued with response activities associated with the conditions existing with a manual Unit trip. Those responses brought the Unit to an orderly, safe and expected condition.

Troubleshooting activities included the calibration of the traveling screen instrumentation for the 2A and 2B CW pumps. All instruments were found to be within tolerance. During these checks, one failed component was

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NARRATIVE

observed. The 2A level differential switch was found stuck in the closed position and replaced. This component failure did not contribute to this event. All other components and systems were found to be functioning normally and as expected.

D. Safety Consequences:

There were no safety consequences impacting plant or public safety as a result of this event. All safety related systems, structures and components operated normally during this event. The loss of multiple CW pumps and the resulting high condenser backpressure are events well within the ability of the operator to control, which include the removal of Unit 2, as necessary.

During the reactor shutdown, all required safety systems responded appropriately. There was no loss of any function that would have prevented fulfillment of actions necessary to 1) Shutdown the reactor and maintain it in a safe shutdown condition, 2) Remove residual heat, 3) Control the release of radioactive material, or 4) Mitigate the consequences of an accident.

The 2A and 2B auxiliary feedwater pumps started on Low Low steam generator levels as expected. The 2C condensate / condensate booster pump automatically started on low net positive suction head, as expected.

This event did not result in a safety system functional failure.

E. Corrective Actions:

The corrective action to prevent recurrence will be to install a time delay to preclude trips of the circulating water pumps due to sudden and false high differential level indication.

F. Previous Occurrences:

There have been no similar Licensee Event Report events at Braidwood Station in the last three years.

G. Component Failure Data:

Manufacturer	Nomenclature	Model	Mfg. Part Number
N/A	N/A	N/A	N/A